

Remarks

Claims 1-24 remain in this application. Claims 1-2, 4-14, and 16-24 are hereby amended. No new matter is being added.

Claim Objection

Claims 6 and 18 are objected to because they informally stated "3-30".

Claims 6 and 18 are amended hereby to replace the informal language with the more formal language of "3 to 30". Hence, applicants respectfully submit that the amended language now overcomes the Examiner's objection.

Claim Rejection– 35 USC 112, Second Paragraph

Claims 1, 4, 6, 13, 16 and 18 are rejected for indefiniteness. The indefiniteness cited includes the term "as close as possible" in claims 1 and 13 and the term "somewhat faster" in claims 4, 6, 16 and 18.

Claims 1 and 13 are hereby amended to remove the term "as close as possible". Claims 4, 6, 16, and 18 are hereby amended to remove the term "somewhat". Hence, applicants respectfully submit that the amended language now overcomes this rejection.

Claim Rejections – 35 USC 103

Claims 1-24 were rejected under 35 U.S.C. 103 as being unpatentable over the cited art. In particular, claims 1-8, 10-20, and 22-24 are rejected as being unpatentable over Roy (USP 6,697,341) in view of Markowitz et al. (USP 6,651,103), while claims 9 and 21 are rejected as being unpatentable over Roy in view of Markowitz et al. in further view of Dunlap et al. (USP 6,697,341). Applicants respectfully traverse these rejections in relation to the claims as now amended.

Claim 1 is hereby amended and now recites as follows.

1. A communications system for transporting multiple individual video streams from a centralized location to multiple end user devices, the system comprising:
 - a network that transmits the multiple individual video streams from a centralized location to a local center located nearer than the centralized location to the multiple end user devices;
 - a video cache at the local center capable of receiving the multiple individual video streams from the centralized location;
 - multiple customer premises devices capable of receiving the multiple individual video streams from the video cache; and
 - a stream manager that controls the multiple individual video streams from the centralized location to the local center,

wherein the stream manager is configured to control bandwidth prioritization between the centralized location and the local center, and

wherein the bandwidth prioritization is controlled by the stream manager such that as an individual video stream reaches a low fill level in the video cache at the local center, that individual video stream is assigned a higher bandwidth priority when compared to other individual video streams that have fuller fill levels.

(Emphasis added.)

As shown above, claim 1 is now requires that the stream manager control bandwidth prioritization between the centralized location and the local center. Moreover, the bandwidth prioritization must be controlled “such that as an individual video stream reaches a low fill level in the video cache at the local center, that individual video stream is assigned a higher bandwidth priority when compared to other video streams that have fuller fill levels.” In other words, when the amount of an individual video stream that is cached at the local center goes below a threshold, that video stream is given a relatively higher priority.

The limitations added to claim 1 in this amendment is supported by the disclosure of the present application. For example, page 4, lines 7 through 15 recites as follows.

Bandwidth prioritization is controlled by the stream manager 113 which dynamically allocates available bandwidth to individual video streams based on an algorithm that sends more content to the local center video cache when there is available bandwidth and less when the transmission path 112 is nearing its overall capacity.

As an individual video stream serving an end user from local center video cache 108 begins to reach the low end of its designated fill level, that stream is assigned a higher bandwidth priority when compared to caches for other video streams that are fuller. That priority is maintained until the cache supporting that individual stream is refilled to its threshold level.

None of the cited art (Roy, Markowitz et al., or Dunlap et al.) discloses or suggests a stream manager that controls bandwidth prioritization between a centralized location and a local center. Moreover, none of the cited art discloses or suggests that “the bandwidth prioritization is controlled by the stream manager such that as an individual video stream reaches a low fill level in the video cache at the local center, that individual video stream is assigned a higher bandwidth priority when compared to other video streams that have fuller fill levels.”

Roy (USP 6,697,341) relates to multimedia conferencing services. Per the disclosure in Roy, “each user can choose the quality of service he/she wants to receive.” (Roy, Abstract, lines 6-7.) In contrast, the amended claim 1 requires a system wherein bandwidth priorities between individual video streams are adjusted based on the fill levels at the video cache at a local center. Roy neither discloses nor suggests this limitation.

Markowitz et al. (USP 6,651,103) relates to a proxy device for streaming media information. Dunlap et al. (USP 6,760,749) relates to a multimedia distribution device

for interactive conferences. Neither Markowitz et al. nor Dunlap et al. disclose or suggest the above-discussed limitations of amended claim 1.

Claims 2-12 depend from claim 1. Hence, claims 2-12 are also patentably distinguished over the cited art for at least the same reasons as discussed above in relation to claim 1.

Claim 13 is a method claim that is amended with language similar to that of amended claim 1. Specifically, claim 13 also requires that the stream manager control bandwidth prioritization between the centralized location and the local center "such that as an individual video stream reaches a low fill level in the video cache at the local center, that individual video stream is assigned a higher bandwidth priority when compared to other video streams that have fuller fill levels." Hence, claim 13 is also patentably distinguished over the cited art for at least the same reasons as discussed above in relation to claim 1.

Claims 14-24 depend from claim 13. Hence, claims 14-24 are also patentably distinguished over the cited art for at least the same reasons as discussed above in relation to claim 13.

Conclusion

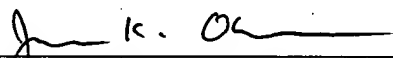
For at least the above-discussed reasons, applicants believe that pending claims 1-24 are now patentably distinguished over the prior art. Favorable action is respectfully requested.

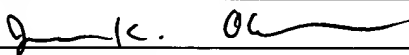
The examiner is also invited to call the below-referenced attorney to discuss this case.

Respectfully Submitted,

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